

Nematode allergen August 2003 A.ST25.txt
SEQUENCE LISTING

<110> AgResearch Limited
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Shoemaker, Charles Bix

<120> Novel Allergen

<130> 31230

<140> 521434
<141> 2002-09-13

<150> NZ 523777
<151> 2003-01-24

<160> 8

<170> PatentIn version 3.1

<210> 1
<211> 228
<212> PRT
<213> Trichostrongylus colubriformis

<400> 1

Met Lys Leu Ile Glu Leu Cys Val Leu Cys Ala Ile Ala Phe Ala Ala
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Pro Arg Gln Lys Arg Leu Thr Val Gly Thr Ile Ala Val Thr Gly Gly
20 25 30

Val Gly Gly Ala Ser Gly Cys Val Val Thr Gly Asn Val Leu Tyr Ala
35 40 45

Asn Gly Phe Arg Leu Arg Glu Leu Ser Ala Ser Glu Gln Gln Glu Leu
50 55 60

Thr Asn Tyr Glu Lys Gln Val Ala Glu Tyr Lys Ala Ser Val Lys Gln
65 70 75 80

Ile Leu Lys Glu Arg Gln Glu Lys Leu Lys Ser Arg Met Ser Gly Lys
85 90 95

Lys Glu Glu Lys Ala Ala Val Thr Ser Thr Lys Asp Glu Asp Leu Pro
100 105 110

Lys Pro Pro Gln Lys Pro Ser Phe Cys Thr Glu Asp Asp Thr Thr Gln
115 120 125

Phe Tyr Phe Asp Gly Cys Met Val Gln Gly Asn Lys Val Tyr Val Gly
130 135 140

Asn Thr Phe Ala Arg Asp Leu Asp Gln Asn Glu Ile Glu Glu Leu Lys
145 150 155 160

Nematode allergen August 2003 A.ST25.txt

Glu Phe Glu Lys Lys Gln Thr Val Tyr Gln Glu Tyr Val Gln Lys Gln
165 170 175

Ile Gln Gln Val Ser Asn Leu Phe Gly Gly Ala Asp Phe Phe Ser
180 185 190

Ser Phe Phe Gly Asp Ala Lys Asp Gln Thr Thr Thr Thr Val Ala Pro
195 200 205

Val Leu Pro Glu Asp Ala Pro Glu Gln Pro Ala Val Pro Asn Phe Cys
210 215 220

Thr Arg Ile Tyr
225

<210> 2
<211> 684
<212> DNA
<213> Trichostrongylus colubriformis

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	cgccttaactg tgggcacgat tgctgtcacc ggaggggtcg gcggagcatc aggctgtgta	120
	gttactggaa atgttctcta tgcaaattgtt ttccgccttc gcgagctcag cgcatcggag	180
	cagcaggaac tgacgaacta cgagaagcag gtggctgaat ataaagcgtc tgtgaagcaa	240
	atactcaagg agcgccagga aaaactgaag tctcgtatgt ccggttaagaa agaggagaag	300
	gctgccgtaa cttccacgaa ggacgaggac ttgccgaaac caccacaaaa gccctcattc	360
	tgcactgagg acgatacgcac acaattctac ttgtatggat gcatggttca gggcaacaag	420
	gtctacgttg gcaacacatt cgcccggtat ctggaccaga atgaaattga agagttgaag	480
	gagtttgaga agaagcagac tgtctatcag gagtacgtcc agaagcaa at ccaacagcaa	540
	gtaagcaacc tcttcgggtgg tgctgacttc ttctcatcat tctttggaga tgccaaggat	600
	cagactacca caactgtggc ccctgttctc cctgaagatg ccccagaaca accagctgtat	660
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<210> 3
<211> 145
<212> PRT
<213> *Trichostrongylus colubriformis*

<400> 3

Met Leu Thr Val Gly Thr Ile Ala Val Thr Gly Gly Val Gly Gly Ala
1 5 10 15

Ser Gly Cys Val Val Thr Gly Asn Val Leu Tyr Ala Asn Gly Phe Arg
20 25 30

Leu Arg Glu Leu Ser Ala Ser Glu Gln Gln Glu Leu Thr Asn Tyr Glu
Page 2

Nematode allergen August 2003 A.ST25.txt
 35 40 45

Lys Gln Val Ala Glu Tyr Lys Ala Ser Val Lys Gln Ile Leu Lys Glu
 50 55 60

Arg Gln Glu Lys Leu Lys Ser Arg Met Ser Gly Lys Lys Glu Glu Lys
 65 70 75 80

Ala Ala Val Thr Ser Thr Lys Asp Glu Asp Leu Pro Lys Pro Pro Gln
 85 90 95

Lys Pro Ser Phe Cys Thr Glu Asp Asp Thr Thr Gln Phe Tyr Phe Asp
 100 105 110

Gly Cys Met Val Gln Gly Asn Lys Val Tyr Val Gly Asn Thr Phe Ala
 115 120 125

Arg Asp Leu Asp Gln Asn Glu Ile Glu Glu Leu Lys Glu Phe Glu Lys
 130 135 140

Lys
 145

<210> 4
<211> 435
<212> DNA
<213> *Trichostrongylus colubriformis*

<400> 4
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cagcaggaac tgacgaacta cgagaaggcag gtggctgaat ataaagcgtc tgtgaagcaa 180
atactcaagg agcgccagga aaaactgaag tctcgtatgt ccggtaagaa agaggagaag 240
gctgccgtaa cttccacgaa ggacgaggac ttgccgaaac caccacaaaa gccctcattc 300
tgcactgagg acgatacgc acaattctac tttgatggat gcatggttca gggcaacaag 360
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<210> 5
<211> 227
<212> PRT
<213> *Ostertagia circumcincta*

<400> 5

Met Lys Leu Val Val Leu Cys Val Leu Cys Gly Ile Ala Leu Ala Ala
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Pro Arg Gln Lys Arg Leu Thr Val Gly Thr Ile Ala Val Thr Gly Gly
 20 25 30

Nematode allergen August 2003 A.ST25.txt

Val Gly Gly Ser Thr Gly Cys Val Val Thr Gly Asn Val Leu Tyr Ala
 35 40 45

Asn Gly Phe Arg Leu Arg Glu Leu Asn Pro Ser Glu Gln Gln Glu Leu
 50 55 60

Val Asn Tyr Glu Lys Gln Val Ala Asp Tyr Lys Ala Ala Val Lys Gln
 65 70 75 80

Ala Leu Lys Glu Arg Gln Glu Ser Leu Lys Ser Arg Met Ala Gly Lys
 85 90 95

Lys Glu Lys Ala Val Thr Pro Lys Glu Glu Asp Leu Pro Lys Ala Pro
 100 105 110

Gln Lys Pro Ser Phe Cys Thr Glu Glu Asp Thr Thr Gln Phe Tyr Phe
 115 120 125

Asp Gly Cys Met Val Gln Gly Asn Lys Val Tyr Val Gly Asn Thr Phe
 130 135 140

Ala Arg Asp Leu Asp Gln Asn Glu Ile Gln Glu Leu Lys Glu Phe Glu
 145 150 155 160

Lys Lys Gln Thr Val Tyr Gln Glu Tyr Val Gln Lys Gln Ile Gln Ala
 165 170 175

Gln Val Ser Asn Leu Phe Gly Gly Ala Asp Phe Phe Ser Thr Phe Phe
 180 185 190

Asn Gly Gly Ser Glu Lys Gly Ser Ser Thr Thr Thr Ala Ala Pro Val
 195 200 205

Leu Pro Asp Asp Ala Pro Glu Gln Pro Ala Val Pro Asn Phe Cys Thr
 210 215 220

Arg Ile Tyr
 225

<210> 6
 <211> 681
 <212> DNA
 <213> *Ostertagia circumcincta*

<400> 6		
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gtgactggaa atgtgctcta tgcaaacggt ttccgccttc gtgagctcaa cccatcagag	180	
cagcaggaac tcgtgaacta tgagaagcaa gtggccgact acaaagcggc tgtgaagcaa	240	
gccctgaagg aacgccagga gagcctgaaa tcgcgtatgg ctggtaagaa ggagaaggct	300	

Nematode allergen August 2003 A-ST25.txt

gtaaactccca aagaggaaga cctaccaaaa gctccacaga agccctcatt ctgcactgag 360
gaagacacca ctcattcta ttttgatgga tgcatggttc aggcaacaa ggtctacgtt 420
ggcaacacct tcgcgcgtga tttggaccag aacgagattc aagagttgaa ggagtttag 480
aagaagcaga ctgtctacca ggaatacgac cagaaggcaga ttcaagcgca agtgagcaat 540
ctgttccggcg gtgccgactt cttctcgacg ttcttcaatg gcggatctga gaaaggctct 600
tccaccacca ccgcagctcc agtacttccc gatgatgcac cagaacaacc agctgtgccc 660
aacttttgca caaggatcta t 681

<210> 7

<211> 226

<212> PRT

<213> Haemonchus contortus

<400> 7

Met Lys Leu Val Val Leu Cys Val Leu Cys Gly Ile Ala Phe Ala Ala
1 5 10 15

Pro Arg Gln Lys Arg Leu Thr Val Gly Thr Ile Ser Val Thr Gly Gly
20 25 30

Val Gly Gly Ser Thr Gly Cys Val Val Thr Gly Asn Val Leu Tyr Ala
35 40 45

Asn Gly Phe Arg Leu Arg Glu Leu Thr Ser Ser Glu Gln Gln Glu Leu
50 55 60

Val Asn Tyr Gly Lys Glu Val Ala Asp Tyr Lys Glu Ala Val Lys Lys
65 70 75 80

Ala Leu Lys Glu Arg Gln Glu Ser Leu Lys Ala Arg Met Ala Gly Lys
85 90 95

Lys Glu Lys Ala Val Thr Pro Lys Glu Glu Asp Leu Pro Lys Ala Pro
100 105 110

Glu Lys Pro Ser Phe Cys Thr Glu Asp Asp Thr Thr Gln Phe Tyr Phe
115 120 125

Asp Gly Cys Met Val Gln Ser Asn Lys Val Tyr Val Gly Asn Thr Phe
130 135 140

Ala Arg Asp Leu Asp His Asn Glu Ile Gln Glu Leu Lys Glu Phe Glu
145 150 155 160 165

Lys Lys Gln Thr Val Tyr Gln Glu Tyr Val Gln Lys Gln Ile Gln Gln
165 170 175 180

Gln Val Thr Asn Leu Phe Gly Gly Ala Asp Phe Phe Ser Ser Leu Phe

Nematode allergen August 2003 A.ST25.txt
180 185 190

Asn Gly Ala Ser Lys Asp Ala Thr Thr Thr Thr Val Ala Pro Ala Leu
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Pro Asp Asp Ala Pro Glu Gln Pro Pro Val Pro Asn Phe Cys Thr Arg
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Ile Tyr
225

<210> 8
<211> 678
<212> DNA
<213> Haemonchus contortus

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gtaaactggta atgtgcttta cgcaaatgga ttccgcctac gtgagcttac ttcatcgaa 180
cagcaggaat tggtaaacta tgggaagcag gtggctgatt ataaagaggc tgtgaagaag 240
gctcttaagg agcgtcagga aagcctgaaa gcccgcattt ctggtaagaa ggagaaggct 300
gtgacgccta aggaggagga ctttcctaaa gcaccagaga agccatcatt ctgcactgag 360
gatgatacta ctcattcta cttcgatggc tgcatggttc agagcaacaa ggtctacgtt 420
ggcaacacat tcgcccgtga tttggatcac aacgaaatcc aagagctaaa ggagttcgag 480
aaaaaacaga cggtctacca agaatacgtc cagaaggcaga tccaacagca agtaaccaac 540
ctatttggtg gtgctgactt cttctcatcc ctcttcaatg gtgcatcaaa ggatgctact 600
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ttctgtacga gaatctat 678